

General Notes:

This report contains results for Metals and Glycols analyses only. All other parameters identified on the chain-of-custody form are included in separate reports. Lab Sample numbers 1202001-06, -15, -19, -34, -35, -36 and 1202001-47 thru -50 are not included in this report since these samples were designated for Volatile Organic analysis only. Sample HW39-RO (1202011-51) was submitted for Metals analysis only.

For Work Order 1202001 - **This is Report 1 of 3.**

All samples were received intact and at proper temperature.

Analytical results for samples by the Orthophosphorus method are not included in this report. Instead samples were analyzed using the Total Phosphate method to eliminate any issues with holding times. Since the Orthophosphorus method was being used as a screening method to determine the need to analyze the sample by the Total Phosphate method, results for Total Phosphate are not impacted.

Samples designated for the analysis of Oil & Grease were received in sample containers inconsistent with the type needed for the routine extraction procedure. Therefore, all samples were extracted using the manual extraction technique.

Where applicable, sample results are qualified based on the highest level concentrations of field QC contamination found in the field, equipment, or trip blanks.

Metals Analysis Note:

Uranium, strontium, lithium, tin, and titanium were analyzed as an on-demand analysis.

Copper and zinc were detected in field blank (FB08). Lead and Zinc were detected in field blank (FB09). Therefore, as required for this project, sample results were qualified "B" when the values for lead, copper and zinc were less than 10X the value reported for the field blanks.

Glycols by HPLC/MS/MS Note:

Samples were analyzed for diethylene glycol (DiG) (CAS# 111-46-6), triethylene glycol (TriG) (112-27-6), tetraethylene glycol (TeG) (112-60-7), 2-butoxyethanol (2-Bu) (111-76-2) and 2-methoxyethanol (109-86-4) by HPLC/MS/MS (inst id: TQD-LCMSMS) on a Waters Atlantis dC18 3um 2.1 x 150mm column (s/n- 0141301481).

An HPLC/MS/MS method does not currently exist for these analytes. ASTM D 7731-11 and EPA SW-846 Methods 8000C and 8321 were followed for method development and QA/QC limits where applicable. All applicable OASQA On Demand QA/QC protocols were followed.

The aqueous samples were injected without extraction onto the HPLC/MS/MS system

Refer to notes in the case file for additional information regarding the analysis.

REPORT 1 of 3

General Notes:

This report contains results for Volatiles (VOAs), Semivolatiles (SVOAs), and Alcohol analyses only. All other parameters identified on the chain-of-custody form are included in separate reports. Lab Sample numbers 1202001-02, -04, -09, -11, -12, -14, -16, -18, -21, -25, -27, -29, -31, -33, 1202001-37 thru -42, and 1202001-51 are not included in this report since these samples were designated for Metals and Mercury analyses only. Sample for location HW39-P is identified by two lab sample numbers (1202001-24 and 1202001-48). Lab Sample 1202001-48 is associated with the Volatile analysis only.

For Work Order 1202001 - **This is Report 2 of 3.**

All samples were received intact and at proper temperature.

Chain-of-Custody forms are included in Report 1 of 3 for this Work Order.

Analytical results for samples by the Orthophosphorus method are not included in this report. Instead samples were analyzed using the Total Phosphate method to eliminate any issues with holding times. Since the Orthophosphorus method was being used as a screening method to determine the need to analyze the sample by the Total Phosphate method, results for Total Phosphate are not impacted.

Samples designated for the analysis of Oil & Grease were received in sample containers inconsistent with the type needed for the routine extraction procedure. Therefore, all samples were extracted using the manual extraction technique.

Where applicable, sample results are qualified based on the highest level concentrations of field QC contamination found in the field, equipment, or trip blanks.

Unless otherwise noted below, all required instrument and method QC was run and was within criteria.

SVOAs Analysis Note:

All samples were extracted by EPA SW-846 Method 3520C followed by analysis using EPA SW-846 Method 8270D. Refer to notes in case file for additional information regarding the analysis.

For this project two additional compounds are added to the SVOC analysis; 2-methoxyethanol and 1-methylnaphthalene. A separate calibration curve is used for these compounds with quality control requirements per the On-Demand protocol. For 2-methoxyethanol, the analysis is also being completed on each sample using the HPLC/MS/MS technique (Glycol analysis). Since SVOC extraction efficiencies are problematic for 2-methoxyethanol, the results from the HPLC/MS/MS technique should be used for these samples.

For all samples quantitation limits for 2-methoxyethanol are elevated due to zero percent recovery in the low-spike quality control check (BS1). For several samples quantitation limits for 2,4-dinitrophenol and 3,3'-dichlorobenzidine are elevated due to zero percent recovery in the low-spike quality control check (BS1). For several samples, quantitation limits for acenaphthene, bis(2-chloroisopropyl) ether, 4-bromophenyl phenyl ether, 4,6-dinitro-2-methylphenol, 2,6-dinitrotoluene, fluorene, pentachlorophenol, phenanthrene, pyrene, 4-chloroaniline, and 3-nitroaniline are elevated due to low percent recovery in the low-spike quality control check (BS1). Results for most of the mid-level spike quality control check (BS2) are within acceptance limits; therefore, quantitation limits are raised to the mid-level value. Results for the mid-level quality control check for 2-methoxyethanol for several samples are qualified as rejected "R" due to zero percent recovery. In the report, only 16 compounds are reported for blank spike quality control check samples. Quality control information about the additional spiked compounds is available in the case file.

For sample 1202001-17, quantitation limit for hexachloroethane is qualified as estimated "UJ" due to low recovery in the matrix spike quality control check.

Surrogates were double spiked in sample 1202001-05. Recovery criteria were met with no impact on quality of results.

Result for bis-(2-ethylhexyl)phthalate in the laboratory blank (BB20502-BLK) is 1.1 ug/L. Sample results are qualified as possible blank contamination "B" when the value is less than 10x the laboratory blank value. For sample 1202001-23 the bis-(2-ethylhexyl)phthalate result is 5.7 ug/L; which is less than the 10x value but greater than 5x.

Results for a limited number of parameters found in all samples have been qualified "B" because of contamination found in either the method blank, field blank, or equipment blank.

VOA Analysis Note:

Acrylonitrile was analyzed on-demand using CLP equivalent methodology. This analyte does not appear in the data tables or the QC summary and all data for this compound is summarized here. Acrylonitrile was not detected in any of the samples above a quantitation limit of 2 ug/L. A four point curve was analyzed (2, 5, 10, and 20 ug/L). The samples were preserved to a pH<2 with HCl. A low level second source blank spike analyzed at a concentration of 2 ug/L had a recovery of 140%. A mid level second source blank spike analyzed at a concentration of 5 ug/L had a recovery of 95%. Matrix spike/matrix spike duplicate analysis was performed for samples 1202001-17 and 1202001-23. Matrix spike recoveries for sample 1202001-17 were 105% and 91%. Matrix spike recoveries for sample 1202001-23 were 97% and 103%.

2-Chloroethylvinyl ether is not included in the analysis. 2-chloroethylvinyl ether breaks down in acidified samples.

Acetone values greater than 2 ug/L have been qualified with a "J", estimated, since the initial calibration curve was outside of acceptance limits for this compound.

Alcohols Analysis Note:

All required instrument QC was run and was within the required criteria.

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General Notes:

This report contains results for Inorganic analyses only. All other parameters identified on the chain-of-custody form are included in separate reports. Lab Sample numbers 1202001-06, -15, -19, -34, -35, -36 and 1202001-47 thru -50 are not included in this report since these samples were designated for Volatile Organic analysis only.

For Work Order 1202001 - **This is Report 3 of 3.**

All samples were received intact and at proper temperature.

Chain-of-Custody forms are included in Report 1 of 3 for this Work Order.

Analytical results for samples by the Orthophosphorus method are not included in this report. Instead samples were analyzed using the Total Phosphate method to eliminate any issues with holding times. Since the Orthophosphorus method was being used as a screening method to determine the need to analyze the sample by the Total Phosphate method, results for Total Phosphate are not impacted.

Samples designated for the analysis of Oil & Grease were received in sample containers inconsistent with the type needed for the routine extraction procedure. Therefore, all samples were extracted using the manual extraction technique.

Where applicable, sample results are qualified based on the highest level concentrations of field QC contamination found in the field, equipment, or trip blanks.

Unless otherwise noted below, all required instrument and method QC was run and was within criteria.

TDS/TSS Analysis Note:

All required instrument QC was run and was within the required criteria.

Nitrite/Nitrate and Total Nitrogen Analysis Note:

Samples were run as an on-demand analysis.

Result for nitrate/nitrite for sample 1202001-44 was qualified estimated 'J' due to the laboratory matrix spike results outside of criteria limits.

Result for total nitrogen for sample 1202001-13 was qualified estimated 'J' due to the laboratory duplicate results outside of criteria limits.

Oil and Grease Analysis Note:

Samples were run as an on-demand analysis.

The quantitation limit for several samples was qualified estimated 'UJ' due to the laboratory minimum reporting limit quality control check outside of criteria limits.

Samples were received in containers not conducive to use on the Horizon SPE-DEX automated system. Therefore, manual extraction technique was used for all samples. Refer to notes in the case file for additional information.

Mercury Analysis Note:

All required instrument QC was run and was within the required criteria.

Total Phosphorus Analyses Note:

Samples were run as an on-demand analysis.

All required instrument QC was run and was within the required criteria.

Anions Analysis Note:

All required instrument QC was run and was within the required criteria.

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